

In the claims: Please change the claims as indicated.

1. (Currently amended) A method of encoding a sequence of bits for transmission via a transmission channel as symbols consisting of a plurality of bits, some of the bit positions of the symbols having a higher bit error rate than other bit positions, the method comprising:

a) a step ~~(31, 32, 41, 42)~~ of providing a plurality of sequences of bits using a convolutional encoder ~~(31, 41)~~, in response to a sequence of input bits, each sequence of bits being defined by a predetermined generator polynomial having a predetermined level of sensitivity to puncturing; and

b) a step ~~(33, 44)~~ of mapping the bits of each sequence of bits to symbol positions based on the level of sensitivity of the generator polynomial defining the sequence of bits.

2. (Currently amended) A method of decoding a sequence of bits encoded for transmission via a transmission channel as symbols consisting of a plurality of bits, some of the bit positions of the symbols having a higher bit error rate than other bit positions, the method comprising:

a) a step ~~(36, 45)~~, responsive to received symbols, of demapping the symbols back to a plurality of sequences of bits, each sequence of bits being defined by a predetermined generator polynomial having a predetermined level of sensitivity to puncturing, the demapping based on the level of sensitivity of a generator polynomial defining a respective one of the sequences of bits; and

b) a step ~~(37, 38, 47, 48)~~, responsive to the plurality of sequences of bits, of providing outputs bits using a convolutional decoder ~~(38-48)~~.

3. (Currently amended) A method as in claim 1, further comprising a step ~~(34, 43)~~ of interleaving.

4. (Currently amended) A method as in claim 2, further comprising a step ~~(35, 46)~~ of deinterleaving.

5. (Currently amended) A method as in claim 3, wherein the interleaving ~~(43)~~ is bit interleaving, and wherein the step ~~(44)~~ of providing a mapping is performed after the step ~~(43)~~ of bit interleaving.

6. (Currently amended) A method as in claim 4, wherein the deinterleaving ~~(46)~~ is bit deinterleaving, and wherein the step ~~(45)~~ of demapping is performed before the step ~~(46)~~ of bit deinterleaving.

7. (Currently amended) A method as in claim 3, wherein the interleaving ~~(34)~~ is symbol interleaving, and wherein the step ~~(33)~~ of providing a mapping is performed before the step ~~(34)~~ of symbol interleaving.

8. (Currently amended) A method as in claim 4, wherein the deinterleaving ~~(35)~~ is symbol deinterleaving, and wherein the step ~~(36)~~ of demapping is performed after the step ~~(35)~~ of symbol deinterleaving.

9. (Currently amended) A method as in claim 3, wherein, in the step ~~(31, 32, 41, 42)~~ of providing a plurality of sequences of bits using a convolutional encoder ~~(31, 41)~~, at least one of the sequences of bits are punctured ~~(32, 42)~~ after using the convolutional encoder ~~(31, 41)~~ in order to fit the at least one sequence of bits into a transmission channel.

10. (Currently amended) A method as in claim 9, wherein the amount of puncturing ~~(32, 42)~~ of each sequence depends on the level of sensitivity of the polynomial defining the sequence.

11. (Currently amended) A method as in claim 1, wherein, in the step ~~(31, 32, 41, 42)~~ of providing a plurality of sequences of bits using a convolutional encoder ~~(31, 41)~~, at least one of the sequences of bits are punctured ~~(32, 42)~~ after using the convolutional encoder ~~(31, 41)~~ in order to fit the at least one sequence of bits into a transmission channel.

12. (Currently amended) A method as in claim 1, wherein, in the step ~~(37, 38, 47, 48)~~ of providing output bits from the plurality of sequences of bits, punctured bits are inserted ~~(37, 47)~~ into at least one of the sequences of bits before using the convolutional decoder ~~(38, 48)~~.

13. (Currently amended) A method as in claim 11, further comprising a step ~~(34, 43)~~ of interleaving.

14. (Currently amended) A method as in claim 13, wherein the interleaving ~~(43)~~ is bit interleaving, and wherein the step ~~(44)~~ of providing a mapping is performed after the step ~~(43)~~ of bit interleaving.

15. (Currently amended) A method as in claim 13, wherein the interleaving ~~(34)~~ is symbol interleaving, and wherein the step ~~(33)~~ of providing a mapping is performed before the step ~~(34)~~ of symbol interleaving.

16. (Currently amended) A method as in claim 11, wherein the amount of puncturing ~~(32, 42)~~ of each sequence depends on the level of sensitivity of the polynomial defining the sequence.

17. (Currently amended) A transmitting apparatus for encoding a sequence of bits for transmission via a transmission channel as symbols consisting of a plurality of bits, some of the bit positions of the symbols having a higher bit error rate than other bit positions, the apparatus comprising:

a) means ~~(31, 32, 41, 42)~~ for providing a plurality of sequences of bits using a convolutional encoder ~~(31, 41)~~, in response to a sequence of input bits, each sequence of bits being defined by a predetermined generator polynomial having a predetermined level of sensitivity to puncturing; and

b) means ~~(33, 44)~~ for mapping the bits of each sequence of bits to symbol positions based on the level of sensitivity of the generator polynomial defining the sequence of bits.

18. (Currently amended) A receiving apparatus for decoding a sequence of bits encoded for transmission via a transmission channel as symbols consisting of a plurality of bits, some of the bit positions of the symbols having a higher bit error rate than other bit positions, the apparatus comprising:

a) means ~~(36, 45)~~, responsive to received symbols, for demapping the symbols back to a plurality of sequences of bits, each sequence of bits being defined by a predetermined generator polynomial having a predetermined level of sensitivity to puncturing, the demapping based on the level of sensitivity of a generator polynomial defining a respective one of the sequences of bits; and

b) means ~~(37, 38, 47, 48)~~, responsive to the plurality of sequences of bits, for providing outputs bits using a convolutional decoder ~~(38-48)~~.

19. (Currently amended) A transmitting apparatus as in claim

17, further comprising means ~~(34, 43)~~ for interleaving.

20. (Currently amended) A receiving apparatus as in claim 18, further comprising means ~~(35, 46)~~ for deinterleaving.

21. (Currently amended) A transmitting apparatus as in claim 19, wherein the means ~~(43)~~ for interleaving performs bit interleaving, and wherein the means ~~(44)~~ for mapping is operative after the means ~~(43)~~ for interleaving.

22. (Currently amended) A receiving apparatus as in claim 20, wherein the means ~~(46)~~ for deinterleaving is bit deinterleaving, and wherein the means ~~(45)~~ for demapping is performed before the step ~~(46)~~ of bit deinterleaving.

23. (Currently amended) A transmitting apparatus as in claim 19, wherein the means ~~(34)~~ for interleaving performs symbol interleaving, and wherein the means ~~(33)~~ for providing a mapping is operative before the means ~~(34)~~ for interleaving.

24. (Currently amended) A receiving apparatus as in claim 20, wherein the means ~~(35)~~ for deinterleaving performs symbol deinterleaving, and wherein the means ~~(36)~~ for demapping is operative after the means ~~(35)~~ for deinterleaving.

25. (Currently amended) A transmitting apparatus as in claim 19, wherein, the means ~~(31, 32, 41, 42)~~ for providing a plurality of sequences of bits using a convolutional encoder ~~(31, 41)~~ includes, after the convolutional encoder ~~(31, 41)~~, means ~~(32, 42)~~ for puncturing at least one of the sequences of bits in order to fit the at least one sequence of bits into a transmission channel.

26. (Currently amended) A transmitting apparatus as in claim 25, wherein the means for puncturing ~~(32, 42)~~ provides puncturing of each sequence in an amount that depends on the level of sensitivity of the polynomial defining the sequence.

27. (Currently amended) A transmitting apparatus as in claim 17, wherein, the means ~~(31, 32, 41, 42)~~ for providing a plurality of sequences of bits using a convolutional encoder ~~(31, 41)~~ includes, after the convolutional encoder ~~(31, 41)~~, means ~~(32, 42)~~ for puncturing at least one of the sequences of bits in order to fit the at least one sequence of bits into a transmission channel.

28. (Currently amended) A receiving apparatus as in claim 18, wherein, the means ~~(37, 38, 47, 48)~~ for providing output bits using a convolutional decoder ~~(38, 48)~~ includes, before the convolutional decoder ~~(38, 48)~~, means ~~(37, 47)~~ for inserting bits into at least one of the sequences of bits.

29. (Currently amended) A transmitting apparatus as in claim 27, further comprising means ~~(34, 43)~~ for interleaving.

30. (Currently amended) A transmitting apparatus as in claim 29, wherein the means ~~(43)~~ for interleaving performs bit interleaving, and wherein the means ~~(44)~~ for providing a mapping is operative after the means ~~(43)~~ for interleaving.

31. (Currently amended) A transmitting apparatus as in claim 29, wherein the means ~~(34)~~ for interleaving performs symbol interleaving, and wherein the means ~~(33)~~ for providing a mapping is operative before the means ~~(34)~~ for interleaving.

32. (Currently amended) A transmitting apparatus as in claim

27, wherein the means for puncturing—(32, 42)—provides puncturing |
of each sequence in an amount that depends on the level of
sensitivity of the polynomial defining the sequence.

33. (Original) A system for wireless communication, comprising
a base station and a mobile station, wherein either the base
station or the mobile station includes a transmitting apparatus
as claimed in claim 17.

34. (Original) A system for wireless communication, comprising
a base station and a mobile station, wherein either the base
station or the mobile station includes a receiving apparatus as
claimed in claim 18.